

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAMESH KESHAVARAJ

Appeal 2008-3720
Reissue Application 10/066,738
Patent 6,294,487
Technology Center 1700

Decided: June 26, 2008

*Before: FRED E. McKELVEY, Senior Administrative Patent Judge,
and SALLY GARDNER LANE and SALLY C. MEDLEY, Administrative
Patent Judges.*

McKELVEY, Senior Administrative Patent Judge.

DECISION ON APPEAL

1 **A. Statement of the case**

2 Milliken & Company ("Milliken"), the real party in interest, seeks
3 review under 35 U.S.C. § 134(a) of a final rejection of claims 1-2, 6-9, 11-12,
4 18-21, 25, 28-29, 32-33, 36-37, and 40-41.

5 We have jurisdiction under 35 U.S.C. § 6(b).

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Reissue Application 10/066,738

1 The application on appeal, filed on 04 February 2002, seeks to reissue
2 U.S. Patent 6,294,487, granted 25 September 2001. The patent is based on
3 application 09/405,999, filed 24 September 1999.

4 The Examiner rejected the claims under 35 U.S.C. § 102(e) as being
5 anticipated by Parker—U.S. Patent Publication 2002/0065367 A1, published
6 30 May 2002 (**Parker publication**). The Parker publication is based on
7 Parker application 10/013,990 filed 11 December 2001 (**Parker**
8 **application**).

9 The Parker application is said to be a continuation of earlier Parker
10 application 09/335,202, filed 17 June 1999 (**earlier Parker application**),
11 which is said in the Parker publication to be "now patented." We take
12 official notice, based on the PALM records of the Patent and Trademark
13 Office, that the earlier Parker application is abandoned—apparently for
14 failure to respond to an Office action.

15 Milliken's filing date is 24 September 1999.

16 The effective prior art filing date of the Parker publication is 17 June
17 1999—the filing date of the earlier Parker application—given that on its face
18 the Parker application is a "continuation" of the earlier Parker application.
19 *Cf. In re Wertheim*, 646 F.2d 527 (CCPA 1981); *In re Klesper*, 55 CCPA
20 1264, 397 F.2d 882 (CCPA 1968).

21 The Parker publication is prior art under 35 U.S.C. § 102(e).

22 In this appeal, Milliken has not attempted to antedate the Parker
23 publication. 37 C.F.R. § 1.131 (2007). Accordingly, for the purpose of this
24 appeal, the Parker publication is prior art.

1 **B. Record on appeal**

2 In deciding the anticipation issue on appeal, we have considered *only*
3 the following documents:

- 4 1. Specification, including original claims, of the reissue
5 application.
- 6 2. U.S. patent 6,294,487, as issued.
- 7 3. Final Rejection mailed 07 October 2005—a response was
8 due on or before 07 January 2006.
- 9 4. Extension of time to file Notice of Appeal filed 07 April
10 2006 (3-month extension).
- 11 5. Notice of Appeal filed 07 April 2006—the Appeal Brief
12 was due on or before 07 June 2006.
- 13 6. Extension of time to file Appeal Brief filed 07 November
14 2006 (5-month extension).
- 15 7. The Appeal Brief filed 07 November 2006.
- 16 8. The Examiner's Answer mailed 03 July 2007.
- 17 9. The Parker publication.
- 18 10. Claims 1-2, 6-9, 11-12, 18-21, 25, 28-29, 32-33, 36-37, and
19 40-41 on appeal as reproduced in the claim appendix of the Appeal Brief.

20 **C. Issues**

21 The issues on appeal is whether Milliken has sustained its burden of
22 showing that the Examiner erred in rejecting the claims on appeal as being
23 anticipated under 35 U.S.C. § 102(e) over the Parker publication.

24 Anticipation is a question of fact. *In re Berger*, 279 F.3d 975, 980
25 (Fed. Cir. 2002).

1 During examination, the fact of anticipation must be established by a
2 preponderance of the evidence. *In re Caveney*, 761 F.2d 671, 674 (Fed. Cir.
3 1985).

4 The burden of showing something by a preponderance of the evidence
5 simply requires the trier of fact to believe that the existence of a fact is more
6 probable than its nonexistence before the trier of fact may find in favor of
7 the party who has the burden to persuade the trier of fact of the fact's
8 existence. *Pension Trust for Southern California*, 508 U.S. 602, 622 (1993).

9 The issue therefore becomes whether Milliken can show that the
10 Examiner's finding is not based on a preponderance of the evidence.

11 **D. Findings of fact**

12 The following findings of fact are believed to be supported by a
13 preponderance of the evidence. To the extent that a finding of fact is a
14 conclusion of law, it may be treated as such. Additional findings as
15 necessary may appear in the Discussion portion of the opinion.

16 Claims on appeal

17 Claim 1, which we reproduce from the claim appendix of the Appeal
18 Brief, reads [indentation added]:

19 An airbag fabric for incorporation within an airbag
20 cushion comprising a woven fabric substrate, at least a portion
21 of which is coated or laminated,

22 wherein said woven fabric substrate has a cover factor
23 below about 1600, and

24 is made from yarns from about 100 to about 630 denier,
25 and

1 wherein the air permeability of said airbag fabric is less
2 than about 0.5 cfm under 124 Pa pressure at about 25° C.

3 The invention

4 The specification defines "cover factor" as "the product of the
5 number of warp yarns per inch of fabric and the square root of the denier
6 of the warp yard all added to the product of the number of weft yarns per
7 inch of fabric and the square root of the denier of the weft yarn."

8 Specification, col. 2:30-34 (references are to the patent sought to be
9 reissued).

10 There are seven examples in the specification, all in the "past" tense.
11 Col. 5:10 through col. 6:43. Accordingly, we presume that all seven
12 examples are based on actual experimentation and are NOT prophetic. If
13 our assumption is not correct, Milliken should file a request for rehearing
14 and advise us that the examples are not based on actual experimentation.
15 37 C.F.R. § 1.56 (2007).

16 Example 1 produced a fabric with a cover factor of 1560. It is
17 calculated according to Milliken's formula as follows:

- 18 1. The denier of the yarns is about 100.
- 19 2. The square root of 100 is 10.
- 20 3. 78 picks/inch times 10 = 780.
- 21 4. 78 ends/inch times 10 = 780
- 22 5. $780 + 780 = 1,560$.

1. The following information is abstracted from Examples 1 through 7.

2	<u>Example</u>	<u>Cover Factor</u>	<u>Picks</u>	<u>Ends</u>	<u>Denier</u>	<u>Permeability</u>
3	1	1560	78	78	100	0
4	2	1594	55	55	210	0
5	3	1597	45	45	315	0
6	4	1476	36	36	420	0
7	5	1375	30	30	525	0
8	6	1305	26	26	630	0
9	7	1844	46	46	420	0

10 Based on Examples 1-6 (which fall within the scope of claim 1 on
11 appeal), as the number of picks and ends decreases, the denier may increase
12 and the cover factor will remain below 1600 all the while maintaining a
13 permeability of zero (0).

14 Example 7 (which does not fall within the scope of claim 1) shows
15 that as the number of picks and ends gets too high, the cover factor may
16 exceed 1600 for a denier of 420 (compare Example 7 with Example 4).

17 Parker publication

18 The Parker publication has much in common with the subject matter
19 of claim 1.

20 It describes fabric made from a polyamide, typically nylon 6,6 (¶ 0011
21 and ¶ 0018—Example 1).

22 It further describes use of yarn having a denier of from 210 to 630,
23 which clearly falls within those contemplated by claim 1.

24 It still further describes the desirability of a low permeability (¶ 0014
25 and ¶ 0018—permeability is described as "essentially zero").

1 Parker publication Example 1 describes a fabric (1) made from
2 nylon 6,6 (the polyamide nylon used in Milliken's Examples 1-7) having a
3 denier of 420 (the denier of Milliken Examples 4 and 7) and (2) having a
4 permeability measured at 124 Pa of "essentially zero." ¶ 0018.

5 C. Discussion

As we understand the Examiner's position, two alternative rationales were advanced in support of a finding that the claimed subject matter is anticipated. We will address each rationale.

$$9 \quad (1)$$

10 The Examiner first set out to prove that the claimed subject matter is
11 inherent in the product of Example 1 of the Parker publication.

12 However, since the Parker publication Example 1 does not describe a
13 cover factor, the Examiner had to establish through other means that the
14 product of Example 1 would have a cover factor less than 1600.

15 The Examiner reasoned that since the product made in Example 1
16 (1) has the same denier, (2) is made from nylon 6,6, is coated with a dry
17 coating of 1.0 ounces per square yard (same as the preferred Milliken range;
18 col. 4:15) and has the necessary "zero" permeability that the cover factor of
19 product of Example 1 "would be inherent."

20 The problem with the Examiner's rationale is that Milliken Examples
21 4 and 7 show otherwise. In both examples, admittedly coated with only 0.6
22 ounces per square yard, but made from a nylon 6,6 yarn having a denier of
23 420, sometimes the cover factor is less than 1600 (Example 4), while on
24 other occasions the cover factor is more than 1600 (Example 7).

1 and ends. We know from Milliken Examples 4 and 7 that the cover factor,
2 all other variable being maintained constant, appears to be a function of the
3 number of picks and ends. Thus, while the Parker publication "walks" and
4 "quacks" like the Milliken Examples, neither Milliken nor we can tell
5 whether it has an "orange" or "brown" beak because we do not know the
6 picks and ends in Parker publication Example 1. Accordingly, we think the
7 Examiner's "duck" rationale, while appropriate in many cases, does not
8 apply in this case.

9 (3)

10 The Examiner's finding of anticipation in this case is not supported by
11 a preponderance of the evidence. Accordingly, Milliken has sustained its
12 burden of showing that the Examiner's anticipation finding is erroneous.

13 **D. Conclusions of law**

14 Milliken has sustained its burden on appeal of showing that the
15 Examiner erred in finding that the subject matter of the claims is anticipated
16 under 35 U.S.C. § 102(e) over the Parker publication.

17 **E. New ground of rejection**

18 **1. Rejection**

19 Claims 1-2, 6-9, 11-12, 18-21, 25, 28-29, 32-33, 36-37, and 40-41 are
20 rejected as being unpatentable under 35 U.S.C. § 103 over Muriwaki (U.S.
21 Patent 6,291,040 B1, issued 18 September 2001, based on an application
22 filed 25 Jan. 1999).

2. Record

In addition to the items listed under "B. Record on appeal" we have also considered the following documents.

11. Moriwaki.

12. The reissue application declaration by the assignee filed 20 May 2003.

13. Declaration under 37 C.F.R. § 1.32 filed 26 August 2003 ("First Declaration).

14. Supplemental affidavit by Ramesh Keshavaraj filed 15 September 2004 (Second Declaration).

3. Findings

In addition to the findings made earlier in this opinion, we make the following additional findings.

Moriwaki

Moriwaki reveals that prior to its invention conventional air bags were produced by coating or laminating a plain weave fabric formed by weaving nylon 6,6 or nylon 6 filament yarns of 300 to 1000 deniers (330 to 1100 dtex) with an elastomeric resin. Col. 1:19-22.

Moriwaki describes various problems in prior art air bags which are said to be overcome by the Moriwaki invention.

Moriwaki, like the prior art it describes, involves an air bag produced by coating a fabric with an elastomeric resin.

The fabric can be formed from a variety of fibers, including nylon 6,6. Col. 2:37-54. Nylon 6,6 is featured in the numerous examples.

A variety of fabric weaves are said to be acceptable. Col. 2:55.

1 Useful filament yarns include those having a denier of 200 to 500
2 (which is 220 to 550 dtex). Col. 3:11-13.

3 The cover factor of the woven fabric is "preferably" 1700 to 2500
4 measured according to a standard set out in Moriwaki. Col. 3:13-20.

5 The Examples illustrate various fabrics.

6 Example 1 describes a fabric (1) made from nylon 6,6 filament yarn
7 of 420 deniers (467 dtex) having 53 yarns/inch in both the warp and weft
8 and (2) having a cover factor of 2172. Col. 6 and col. 10:15 (Table 1). Air
9 permeability is also reported. Col. 10:30.

10 Example 3 describes a fabric (1) made from nylon 6,6 filament yarn
11 of 315 deniers having 60 yarns/inch in both the warp and weft and (2)
12 having a cover factor of 2129. Col. 7 and col. 10:53 (Table 1). Air
13 permeability is also reported. Col. 11:10.

14 The claims describe a woven fabric fibrous substrate. Col. 12;
15 claim 12. No cover factor is set out in claim 12.

16 Claim 13 limits the cover factor to 1700 to 2500 of claim 12 .
17 Col. 12. *See also* col. 3:14 identifying a cover factor of 1700 to 2500 as
18 "preferably."

19 Claim 14 limits the filament yarns to those of 200 to 500 deniers.
20 Col. 12. *See also* col. 3:12.

21 Claim 18 limits the air permeability to not more than 20 cc/cm²/sec.

22 Claim 19 further limits the air permeability to not more than
23 10 cc/cm²/sec.

24 Several examples illustrate the Moriwaki invention.

25 The following information is abstracted from Moriwaki examples.

1 Permeability is set out as cc/cm²/sec whereas Milliken reports
2 permeability in ft³/min.

3	<u>Example</u>	<u>Cover Factor</u>	<u>Picks</u>	<u>Ends</u>	<u>Denier</u>	<u>Permeability</u>
4	1	2174	53	53	420	6.5
5	3	2129	60	60	315	6.1
6	4	2254	57	57	420	7.1
7	Comp 5	1476	25	25	840	0

8 Moriwaki has the following to say about the fabric described in
9 Comparative Example 5 ("Comp 5" *supra*). "The base fabric for air bags of
10 Comparative Example 5 was excellent in prevention of fraying and low air
11 permeability, but was so hard as to impair foldability and to complicate
12 processing disadvantageously having regard to productivity." Col. 9:5-11.

13 While Comparative Example 5 has a cover factor within the scope of
14 the claims on appeal, the denier of 840 is higher than the 630 maximum
15 called for by claim 1 on appeal.

16 First Declaration

17 In a First Declaration, inventor Keshavaraj says he is familiar with
18 Moriwaki. ¶ 5.

19 Keshavaraj tells us that he took measurements of "one commercially
20 available embodiment" said to fall within the scope of the Moriwaki claims
21 having a cover factor of 1885 made with 420 denier nylon 6,6 yarns with a
22 count of 46 x 46 weave density. *Id.* The commercially available
23 embodiment is not otherwise described.

1 Keshavaraj believes the commercially available embodiment had an
2 anionic ionomer type polyester based urethane resin coating—based on
3 examples in Moriwaki.

4 Based apparently on some testing, Keshavaraj determined that the air
5 permeability of the commercial item was 0.645 cfm—cubic feet per minute.
6 *Id.*

7 Based on his analysis, Keshavaraj believes the commercial
8 embodiment does not "anticipate" the claimed invention.

9 Second Declaration

10 In a Second Declaration, inventor Keshavaraj discusses testing a
11 commercial embodiment having a cover factor of 1885 made with 420
12 denier nylon 6,6 yarns and a 46 x 46 thread in both the warp and weft
13 direction. ¶ 6.

14 According to Keshavaraj, the air permeability was 11 cc/cm²/sec. *Id.*
15 Keshavaraj did not favor the PTO with a conversion of 11 cc/cm²/sec into
16 ft³/min mentioned in the claims on appeal.

17 Keshavaraj alleges that Moriwaki fails to "disclose or suggest" a
18 fabric with a cover factor on the order claimed and that Moriwaki falls to
19 "teach" low permeability fabrics. *Id.*

20 Discussion

21 We start with the proposition that the value of prior art of a reference
22 is not limited to the disclosure of specific working examples. *In re*
23 *Chapman*, 53 CCPA 978, 985, 357 F.2d 418, 424 (CCPA 1966). *See also In*
24 *re Mills*, 470 F.2d 649, 651 (CCPA 1972).

1 Milliken asserts that it is the first to achieve a cover factor of less than
2 1600. Moriwaki Comparative Example 5 describing a cover factor of 1449
3 shows that Milliken is not the first to achieve cover factors below 1600.

4 It is true that Moriwaki achieves a cover factor of 1449 using yarn of
5 840 deniers, whereas Milliken claims a range of 100 to 630 deniers.
6 However, also described by Moriwaki is a teaching that the denier can
7 range from 200 to 500 deniers. Col. 3:12.

8 What is not entirely clear on the record is what weight one skilled in
9 the art assigns to "cover factor." Milliken could argue that Moriwaki
10 Comparative Example 5 would tend to discourage use of "low" cover factors
11 based on impaired foldability and processing disadvantages. A teaching
12 away from a claimed invention is a relevant factual inquiry in an
13 obviousness analysis. *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374,
14 1381 (Fed. Cir. 2007) (a reference may be said to teach away when a person
15 of ordinary skill, upon reading the reference, would be (a) discouraged from
16 following the path set out in the reference or (b) lead in a direction divergent
17 from the path that was taken by the applicant). While there may be
18 circumstances where foldability and processing may control a choice of
19 "cover factor," on this record we do not know that Milliken's "low" cover
20 factor fabrics do not have the same problem as those described in
21 Comparative Example 5.

22 To the extent that foldability and processing are *not* a concern, then
23 nothing in Moriwaki necessarily would discourage use of fabrics having low
24 cover factors. Based on Moriwaki, one skilled in the art would know that
25 one way to achieve a "low" cover factor would be through minimizing the

1 number of yarns per inch both for warp and weft. Interestingly, the fabric of
2 Moriwaki Comparative Example 5 is the only Moriwaki fabric reported to
3 have an air permeability of zero (0).

4 We cannot find a limitation in Milliken's claims which would exclude
5 air bags having no foldability and no processing disadvantages. We
6 therefore feel comfortable finding that if neither is an issue in a particular
7 circumstance, then one skilled in the art would have been inclined to make
8 fabrics with "low" cover factors recognizing that certain problems would
9 follow. One reason for doing so would have been the apparent need for less
10 yarn and therefore cheaper cost for making the air bag.

11 While a cheaper air bag may not be a desirable commercial product,
12 we cannot say it is not without use. Depending on how tight the air bag has
13 to be packed (*i.e.*, the size of the space into which the air bag will be
14 "stored" pending a need for its use), foldability would not be a concern.

15 In responding to our new ground of rejection based on § 103, Milliken
16 may wish to address (through citation of prior art or declaration evidence)
17 (1) the importance of foldability, (2) the importance of processing, (3)
18 whether the claimed air bags suffer from the foldability and processing
19 disadvantages said to exist in the air bag of Moriwaki Comparative
20 Example 5, and (4) what limitation in the claims would exclude those
21 disadvantages.

22 **F. Requirement for information**

23 If Milliken elects to respond to the new ground of rejection (or for that
24 matter file an RCE or continuation or in any way continue to seek a reissue
25 patent), then pursuant to Rule 105 (37 C.F.R. § 1.105 (2007)) we require

1 Milliken to make a complete identification on the record of the embodiment
2 "practiced commercially" which is mentioned in the Reissue Application
3 Declaration by the Assignee filed 20 May 2003. It is the PTO which should
4 evaluate whether the embodiment practiced commercially renders the claims
5 obvious or non-obvious over that embodiment. Among other things, it is
6 material that the PTO know the cover factor, the number of yarns, the
7 deniers of those yarns, the composition of those yarns (e.g., nylon 6,6), as
8 well as any other relevant characteristics of the embodiment practiced
9 commercially in order to make an informed decision on obviousness. Any
10 information must be filed when a response to this decision is filed. If no
11 response is filed to this decision, then the information must be filed upon the
12 filing of an RCE or a continuing application.

13 **G. Decision**

14 ORDERED that the decision of the Examiner rejecting the
15 claims on appeal over the Parker publication is *reversed*.

16 FURTHER ORDERED that we have entered a new ground of
17 rejection. 37 CFR § 41.50(b) (2006).

18 FURTHER ORDERED that our decision is not a final agency
19 action.

20 FURTHER ORDERED that within **two (2) months** from the
21 date of our decision appellant may further prosecute the application on
22 appeal by exercise one of the two following options:

23 1. Request that prosecution be reopened by submitting
24 an amendment or evidence or both. 37 CFR § 41.50(b)(1) (2007).

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- 1 2. Request rehearing on the record presently before the
- 2 Board. 37 CFR § 41.50(b)(2) (2007).
- 3 FURTHER ORDERED that no time period for taking any
- 4 subsequent action in connection with this appeal may be extended under
- 5 37 C.F.R. § 1.136(a)(1)(iv) (2007).

REVERSED

NEW GROUND OF REJECTION—37 C.F.R. § 41.50(b) (2007)

sd

cc (via First Class mail)

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